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AUTHOR Marini, Margaret Mooney
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ABSTRACT

The sequencing of four role changes marking the transition from adolescence to adulthood--exit from school, entry into the labor force, marriage, and parenthood--is reported. The research is based on data from a study of 8500 high school students in 10 Illinois high schools in 1957-58 (Coleman, 1961) and a 15-year follow-up survey of 6500 of the same individuals in 1973-74 (Marini, 1977). Participants answered questionnaires and telephone interviews regarding their marital, fertility, and migration experiences during the 15-year interval. About half of each sex experienced role changes in varying sequences, specifically in exiting from school and entering the labor force and in familial and non-familial role changes. Those who attained high levels of education were most likely to enter the labor force and to enter adult family roles before leaving full-time schooling. Those who entered adult roles prior to completion of schooling did so at relatively late ages. Other variables affecting the rate of progress through school included income of parents, grade point average, military service, and early and frequent dating during adolescence. (KC)

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THE ORDER OF EVENTS IN THE TRANSITION TO ADULTHOOD*

Margaret Mooney Marini
Battelle Human Affairs Research Centers

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THE ORDER OF EVENTS IN THE TRANSITION TO ADULTHOOD

ABSTRACT

The transition from adolescence to adulthood is marked by a series of interrelated events that represent movement from economic dependence and participation in the family of origin to economic independence and establishment of a family of procreation. Among the most significant of these events are role changes, including movement out of the student role and entry into the adult roles of worker, spouse, and parent. At present, little is known about the temporal order in which these role changes occur. Based on data from a fifteen-year follow-up study of high school students originally surveyed in 1957-58 and resurveyed in 1973-74, this paper examines the order of events in the transition from adolescence to adulthood and the causal factors that determine the order of events. Data for both sexes are analyzed.

THE ORDER OF EVENTS IN THE TRANSITION TO ADULTHOOD

The transition from adolescence to adulthood is marked by a series of interrelated events representing movement from economic dependence and participation in the family of origin to economic independence and establishment of a family of procreation. Most research on the transition to adulthood has focused on discrete events during this period of the life cycle. Recently, however, the transition to adulthood has been viewed as a process that can be described by the timing and ordering of the events of which it is comprised (Modell et al., 1976; Hogan, 1978b; Winsborough, 1978; Marini, 1981b). This new research has focused primarily on role changes, such as movement out of the student role, entry into the labor force, entry into marriage, and entry into parenthood. The timing of these role changes has been studied by examining the ages at which they occur, as well as the duration it takes for a cohort to complete a series of role changes (Modell et al., 1976; Winsborough, 1978; Marini, 1981b). The ordering of these role changes has been studied by examining their temporal sequence (Hogan, 1978b), although less attention has been devoted to this aspect of the transition process than to the timing of role changes. The purpose of this paper is to examine the ordering of role changes during the transition to adulthood and the causal process by which it is determined. Research on this topic is of interest because those who experience role changes in an order that is less conducive to successful role performance and to the management of conflicting role demands may experience negative consequences in role performance and satisfaction in adulthood.

Hogan (1978b) has examined the ordering of three role changes -- exit from school, entry into the labor force, and entry into marriage -- in the lives of males born between 1907 and 1952. In each of nine cohort groups, he found that the dominant ordering pattern was one in which exit from school occurred first, followed in order by entry into the labor force and entry into marriage. Hogan viewed this order of events as not only statistically normative but indicative of a socially prescribed order, which he described as "natural" and promoting maximum harmony between the individual and the social context in which the individual lives. Hogan regarded deviations from this normative pattern as "disorderly" and characterized respondents according to the degree to which the order of events in the transition to adulthood did not conform to this "normative" pattern.

As discussed in detail elsewhere (Marini, 1981a), equating statistical modality with social normativeness involves misuse of the concept of social norm. A norm is a collective, or shared, evaluation of what behavior ought to be, with sanctions attached. Equating a statistical average or typical value with social normativeness assumes both the existence and content of a norm. No direct evidence on norms governing the order of events during the transition to adulthood is available. If it is assumed that a modal behavior pattern represents a social norm and that variation in the distribution of behavior reflects variation in conformity to norms, it is assumed that only a narrow range of behavior is normative and that there is no variation in norms for subgroups of the population. It may be the case that no norms governing the order of events during the transition to adulthood exist. If they do exist, they may define a wider range of behavior than that represented by a statistical average or typical value as normative, and the normative range of behavior may vary for subgroups of the population. Variation in the

distribution of behavior may therefore reflect variation within a normative behavior range or variation in norms, as well as variation in conformity to norms.

It seems likely that variation in the order of events during the transition to adulthood -- especially that associated with social class -- represents variation within a normative range of behavior or variation in norms. Hogan (1978b) found that social class (as measured by education) was an important predictor of variation in the order of events during the transition to adulthood. Those who attained high levels of education were less likely to experience events during the transition to adulthood in the "normative" sequence than those who attained low levels of education. This variation is more likely to represent variation within a normative range of behavior or variation in norms by social class than variation in conformity to a single normative pattern. Evidence on the preferred ages to undergo various role changes during the transition to adulthood indicates the existence of variation in these preferences for subgroups of the population and over time. This variation is associated with social class (Neugarten et al., 1965; Modell, 1980; Marini, 1981a). The mode of the behavior distribution, therefore, cannot be assumed to represent behavior that is socially prescribed for all individuals, with other behavior being assumed to be "disorderly" or nonnormative.

This paper examines the order of events in the transition to adulthood without equating variation in the order of events with variation in conformity to a single "normative" (modal) sequence. The sequencing of four role changes during the transition from adolescence to adulthood is studied: exit from school, entry into the labor force, entry into marriage, and entry into parenthood. Although the distribution of all possible ordering patterns is

examined, the primary focus of the paper is on particular types of variation in the order of events that are viewed as substantively meaningful because of the nature of the events involved. That is, the focus is on the sequencing of particular combinations of events rather than on the sequencing of all events simultaneously. Three types of variation in the ordering of events are identified as being of greatest interest: (1) variation in the sequencing of exit from school and entry into the labor force, (2) variation in the sequencing of entry into marriage and entry into parenthood, and (3) variation in the sequencing of familial (entry into marriage and parenthood) and nonfamilial (exit from school and entry into the labor force) role changes. Because there is little variation in the sequencing of entry into marriage and entry into parenthood in the sample studied, the analysis focuses primarily on the sequencing of exit from school and entry into the labor force and on four measures of the sequencing of familial and nonfamilial role changes.

The purpose of the paper is twofold: (1) to identify the order of events in the transition from adolescence to adulthood and (2) to examine the causal process by which variation in the order of events is determined. To accomplish the latter objective, the order of events is studied as a function of influences arising at earlier stages of the life cycle, as well as experiences during the period of transition to adulthood. Because there has been little previous research on the order of events in the transition to adulthood, little is known about the determinants of the order of events. These determinants are likely to include influences that delay some role changes and influences that hasten others. For example, the sequencing of familial and nonfamilial role changes is likely to be affected by educational attainment, which has a stronger delaying effect on exit from school and entry into the labor force than on entry into adult family roles, and by dating

frequency and premarital pregnancy, which hasten entry into marriage and parenthood.

One of the major limitations of previous research on the order of events in the transition to adulthood is that it has been based only on males. Nothing is known about the order of events during this period of the life cycle for females and the way in which it differs from that for males. Because women spend a shorter period of time in school and are less likely to return to school after an initial interruption (Marini, 1981b), they are less likely to enter the labor force prior to the completion of schooling than men. Similarly, because the probability of entry into marriage prior to the completion of schooling increases with educational attainment (Hogan, 1978b) and therefore with the duration of time spent in school, women are less likely to enter adult family roles prior to the completion of schooling than men. Women are also less likely to enter adult family roles prior to the completion of schooling because sex differentiation in adult roles makes fulfillment of adult family roles less compatible with the continuation of education for women than men. This paper examines and compares the order of events in the transition to adulthood for the two sexes and seeks to identify sex differences in the causal process by which the order of events is determined.

The analysis presented is based on data obtained from members of cohorts born in the early 1940s, who have recently completed the transition to adulthood. A large body of data was obtained from a sample of these cohorts via a survey when they were in high school in the late 1950s and a fifteen-year follow-up survey of the same individuals when they were completing the process of transition to adulthood in the 1970s. Because the analysis is based on data from a narrow range of cohorts, the results pertain to the transition to adulthood as it was experienced during a particular

historical period. There is reason to expect that the broad outlines of this process have remained the same for a considerble period, but some change has occurred in the relative frequency of various ordering patterns over time (Hogan, 1978b). Sex differences in the process of transition to adulthood also may have decreased in recent years, since sex differences in educational attainment and the timing of entry into adult family roles are known to have decreased (U.S. Bureau of the Census, 1976a, 1976b; Heyns and Bird, 1979). These changes suggest that, as data for more recent cohorts become available, more research will be needed to document changes in the order of events and in the process by which it is determined.

DATA AND METHODS

This research is based on data from a study of students in ten Illinois high schools in 1957-58 and a fifteen-year follow-up survey of the same individuals in 1973-74. The original study was carried out by Coleman and reported in his book, The Adolescent Society (1961). The purpose of Coleman's analysis was to investigate the nature and consequences of high school status systems. The sample of schools upon which the research was based was selected to provide variation in size, in type of community location, and in adolescent status system. With the exception of a small number of absentees, the sample was comprised of all students in the ten high schools studied.[1] Usable data were obtained from a total of 8,617 students (4,352 females and 4,265 males) via a questionnaire administered in the fall of 1957[2] and from 64 percent of these students' parents via a mailed questionnaire. Data also were collected from the students' school records.

The follow-up survey was designed and carried out fifteen years after the original data collection period by Temme and Marini (Marini, 1977). Data were

obtained from 6,498 (3,433 females and 3,065 males) of the former students, or 75 percent of the original adolescent sample. The data were obtained initially by mailed questionnaire and then by telephone interview from those who did not return a questionnaire. Forty-four percent of the original sample responded to the questionnaire and 31 percent to the shorter telephone interview. The rate of refusal to participate was low, the nonrespondents primarily being individuals who could not be located. The analysis presented in this paper is based on the 6,498 respondents to the follow-up survey.

Although the original sample was a purposive one rather than one chosen to be representative of a geographically-defined population, analyses based on this sample (Marini, 1974, 1978b) show striking similarity to those based on other samples of this cohort, including the sample of Wisconsin high school seniors analyzed by Sewell and his associates (Sewell and Shah, 1967, 1968a, 1968b; Sewell and Hauser, 1975) and the EEO sample of sophomores in selected U.S. high schools analyzed by Alexander and Eckland and their associates (Alexander and Eckland, 1974; Alexander et al., 1975). A comparison of data obtained in the follow-up survey with data reported for this cohort by the U.S. Census Bureau also shows that the distribution of the sample on major demographic variables, such as educational attainment, employment status, marital status, fertility, age at first marriage, and age at the birth of each child, is fairly similar to the distribution of the U.S. population as a whole (Marini, 1977). The sample is somewhat more highly educated than the U.S. population, however -- a difference which stems in part from the fact that those comprising the sample had already completed various stages of high school at the time of the original survey.

Respondents to the follow-up were found to be highly representative of the total original sample and those whose parents responded to the parents'

questionnaire were only slightly less so (Marini, 1977). However, respondents to the initial follow-up questionnaire, who constitute 44 percent of the original sample and 58 percent of the follow-up sample, were somewhat less representative of the total adolescent sample in their means and standard deviations than was the total follow-up sample. Because data were available for several subsets of variables, measured for varying numbers of respondents, and because there was some bias in one of the subsets of variables, an analysis based only on those individuals responding to variables in all subsets also would have been somewhat biased. To base the analysis on the total follow-up sample, missing data on variables measured for less than the total follow-up sample were estimated via regression on observed variables. No attempt was made to correct for bias resulting from the assumption that there was no error in prediction under the regression model, but a comparison of the results of this analysis with the results of an analysis in which such a correction was made (as described in Marini et al., 1979) indicated that the procedure used to estimate missing data had no important effect on the results of the analysis.

A major portion of the data collected during the follow-up survey consisted of retrospective life histories of each respondent's educational, occupational, marital, fertility, and migration experiences during the fifteen-year period between the adolescent and follow-up surveys. These experiences were tied to a time frame and could be ordered chronologically and linked to one another in time. Variables measuring the sequencing of role changes during the transition to adulthood were constructed from these life histories.

THE ORDER OF EVENTS

As indicated above, this paper examines the temporal ordering of four events during the transition to adulthood: exit from school, entry into the labor force, entry into marriage, and entry into parenthood. These events are of particular interest because they involve role changes: exit from the role of student and entry into the adult roles of worker, spouse, and parent. To measure the sequencing of these four role changes, the age (in months) at which each role change occurred was identified. If two role changes occurred in the same month, they were assumed to occur in the most common sequence.

The timing of movement out of the student role is difficult to measure because the process of formal education often is interrupted and may take place on either a full-time or part-time basis. In the sample studied, 14.0 percent of females and 16.8 percent of males interrupted full-time education for a period of more than one academic year (i.e., for more than sixteen consecutive months). After leaving full-time education for the last time, 15.2 percent of females and 32.1 percent of males continued their educations on a part-time basis. For the purpose of this analysis, the timing of exit from school is measured by the age at an individual's last exit from the role of full-time student.

The timing of entry into the adult worker role, as defined by entry into the labor force, is also difficult to measure. Previous definitions of entry into the labor force have defined labor force entry only in terms of exit from school. Entry into the labor force has been defined as entry into the first full-time civilian job held after leaving school (Blau and Duncan, 1967:166-7; Duncan et al., 1972:210-6) or after completing one's highest grade in school (Featherman and Hauser, 1975:238; Featherman and Carter, 1976).

Alternatively, it has been defined as the time at which an individual first holds or looks for a full-time job for a period of more than sixteen months after leaving full-time education (Ornstein, 1976:24-5). Although these definitions allow for the possibility that an individual may enter the labor force before leaving school, they do so only in situations where an individual leaves school and the job held after leaving is started before leaving or an individual remains out of school for more than one academic year before returning. By definition, entry into the labor force usually follows exit from school.

To consider entry into the labor force an independent event and examine its timing in relation to the timing of other events, it is necessary to define entry into the labor force without reference to exit from school. However, for entry into the labor force to represent a significant role change in the transition to adulthood, it must be defined in a way that excludes short-term and partial attachments to the labor force, such as those represented by summer and part-time jobs held during the schooling process. For the purpose of this analysis, therefore, entry into the labor force is defined as entry into the first full-time job held for at least six months.

Military jobs present a further complication in defining entry into the labor force for males. Entry into the labor force may be defined as entry into a full-time military or civilian job or as entry into a full-time civilian job. On the one hand, entry into a full-time military job may be regarded as an appropriate marker of entry into the labor force because it involves entry into a full-time job. On the other hand, the unique nature of military service and the fact that it usually represents an interruption in the transition from school to career rather than a first step on the career ladder may cause entry into a full-time military job to be regarded as an

inappropriate marker of entry into the labor force, except in cases where military service is continued as a career. In this paper two variables are used to measure the timing of entry into the labor force for males: (1) the age at entry into the first full-time job (military or civilian) held for at least six months and (2) the age at entry into the first full-time civilian job held for at least six months. (These two measures yield the same age at entry into the labor force for females since few women entered the military.)

In contrast to the timing of exit from school and entry into the labor force, the timing of entry into the adult family roles of spouse and parent is easy to measure. The timing of entry into marriage is measured by age at first marriage, and the timing of entry into parenthood is measured by age at the birth of the first child.

Based on these measures of the timing of role changes during the transition to adulthood, the order of events in the transition to adulthood was determined. The distribution of cases across all possible ordering patterns, including those comprised of less than four events, is summarized by sex in Table 1. Fifteen patterns were experienced by more than 1 percent of at least one sex. These fifteen patterns reduce to ten when those who experienced three events are assumed to experience the fourth event last. Together, these patterns describe the ordering of events for more than 90 percent of the sample.

TABLE 1 ABOUT HERE

By far the most common pattern is one in which exit from school occurs first, followed in order by entry into the labor force, entry into marriage,

and entry into parenthood. This pattern was experienced by about half of each sex. The second most common pattern differs only in that entry into the labor force precedes exit from school. About 9 percent of females and 17 percent of males experienced this pattern. A third pattern, which occurred with some frequency for females but not for males, is one in which exit from school occurs first, followed in order by entry into marriage, entry into parenthood, and then entry into the labor force. About 13 percent of females but less than 1 percent of males experienced this ordering pattern. Other ordering patterns were experienced by no more than 7 percent of either sex.

Although it is of interest to examine the distribution of cases across all possible orderings of the four role changes studied, the ordering of particular types of role changes is of greater theoretical importance. The ordering of exit from school and entry into the labor force describes variation in the process of transition from the student to the worker role. In most cases a student leaves full-time schooling prior to entering into the full-time labor force; however, in some cases entry into the full-time labor force occurs prior to leaving full-time schooling. Individuals who enter the labor force before leaving full-time schooling may either interrupt their schooling for a period of full-time labor force participation or work full-time while enrolled in school full-time. As shown in Table 2, 22.2 percent of females and 30.6 percent of males in the sample entered the civilian labor force prior to leaving full-time education for the last time.

TABLE 2 ABOUT HERE

The ordering of entry into marriage and parenthood describes variation in the sequencing of familial role changes. Because of strong moral sanctions

against out-of-wedlock childbirth, few individuals actually enter into parenthood prior to marriage. Only about 1 percent of the sample studied experienced entry into parenthood prior to entry into marriage. A more common occurrence was for pregnancy, or impending entry into parenthood, to precede entry into marriage and precipitate marriage prior to entry into parenthood. In the sample studied, 14.3 percent of females and 12.7 percent of males experienced or were involved in the conception of premarital pregnancies. Because the focus of this paper is on the sequencing of actual role changes and little variation was observed in the sequencing of entry into marriage and parenthood, further analysis of the sequencing of familial role changes is not presented.

Finally, it is of interest to consider the ordering of familial and nonfamilial role changes -- that is, the ordering of the familial role changes of entry into marriage and parenthood with the nonfamilial role changes of exit from school and entry into the labor force. Although it is most common for individuals to experience the nonfamilial role changes of exit from school and entry into the labor force prior to the familial role changes of entry into marriage and parenthood, some individuals experience one or both familial role changes prior to leaving full-time schooling and entering the labor force. Since entry into parenthood rarely precedes entry into marriage, those who make one familial role change prior to leaving school and entering the labor force are those who marry but do not have a child prior to experiencing these nonfamilial role changes. Those who make two familial role changes prior to leaving school and entering the labor force are those who both marry and have a child prior to experiencing the nonfamilial role changes.

When measuring the sequencing of familial and nonfamilial role changes, it is informative to consider whether one or both of the familial role changes

occurred prior to one or both of the nonfamilial role changes. Such an analysis permits consideration of varying degrees of divergence from the typical sequencing of familial and nonfamilial role changes. Entry into marriage prior to nonfamilial role changes is a less atypical sequencing pattern than entry into both marriage and parenthood prior to nonfamilial role changes. Similarly, the occurrence of familial role changes prior to exit from school is a less atypical sequencing pattern than the occurrence of familial role changes prior to both exit from school and entry into the labor force. Examination of the occurrence of familial role changes in relation to the completion of full-time schooling is of interest because schooling is the major activity that delays entry into adult roles for both sexes. Examination of the occurrence of familial role changes in relation to both the completion of full-time schooling and entry into the labor force is of interest because it is indicative of whether familial role changes occurred prior to initiation of the process of nonfamilial role change, as defined by exit from school and entry into the labor force. (It would be possible to consider whether one or both familial role changes occurred prior to completion of the process of nonfamilial role change (i.e., prior to the occurrence of either exit from school or entry into the labor force), but such a measure would have a different interpretation for the two sexes because some women delay entry into the labor force for a considerable period.) In this paper the occurrence of one or both familial role changes is considered in relation, first, to exit from full-time schooling and, second, to initiation of the process of nonfamilial role change.

As shown in Table 2, 18.5 percent of females and 22.1 percent of males in the sample studied entered into marriage prior to the completion of full-time

schooling. By comparison, only 7.7 percent of females and 9.7 percent of males entered into marriage prior to initiating the process of nonfamilial role change (i.e., prior to both the completion of full-time schooling and entry into the labor force). Entry into both marriage and parenthood occurred prior to the completion of full-time schooling for 10.7 percent of females and 13.2 percent of males. By comparison, only 2.6 percent of females and 3.9 percent of males entered into both marriage and parenthood prior to the completion of full-time schooling and entry into the labor force.

DETERMINANTS OF THE ORDER OF EVENTS

The sequencing of exit from school and entry into the labor force and of these nonfamilial role changes with the familial role changes of entry into marriage and parenthood can be viewed as a function of two sets of influences, one operating through involvement in preparatory and transitional roles during and immediately after adolescence, and the other affecting the timing of entry into adult roles. In thinking about activities during the period of transition from adolescence to adulthood, it is useful to distinguish between those confined to this period of the life cycle and those initiated during this period and continued throughout much of adult life. The former may be viewed as activities mediating the transition to adulthood and include the continuation of education beyond the completion of basic educational requirements mandated by law and military service (except in cases where military service is continued as a career). Because these activities are confined to a transitional period of the life cycle, they are of short duration compared to the major activities that occupy individuals in adulthood. They also tend to occur prior to adult role entry, since they are, for the most part, incompatible with fulfillment of major adult roles. Other

activities, such as full-time labor force participation, marriage, and parenthood, are initiated during this period and continued throughout much of adulthood.

As the level of educational attainment has increased and the ages at first marriage and first birth have declined during the twentieth century (Panel on Youth, 1974; U.S. Bureau of the Census, 1976a, 1976b), the duration it takes to experience the major role changes that constitute the transition from adolescence to adulthood has decreased (Modell et al., 1976; Winsborough, 1978). Activities mediating the transition to adulthood, such as education and military service, are therefore likely to bear a stronger relationship to the timing of entry into adult roles than they did at the turn of the century. Research on recent cohorts indicates that the duration spent in these transitional activities is a major determinant of the timing of adult role entry. The older the ages at leaving school and the military, the older the ages at entry into the civilian labor force, entry into marriage, and entry into parenthood (Hogan, 1978a; Marini 1978b, 1982; Hofferth, and Moore, 1979; Rindfuss et al., 1980; Mare and Winship, 1982). Despite the delaying effect of involvement in transitional roles on entry into adult roles, however, the duration spent in transitional roles can be expected to increase the probability that adult role entry will occur prior to exit from transitional roles. The older the ages at leaving full-time schooling and the military, the higher the probability that entry into adult roles will occur prior to leaving school and the military.

In addition to influences operating through involvement in transitional roles, direct influences on the timing of entry into adult roles are likely to affect the sequencing of role changes. These include measures of the

availability of the opportunity to enter an adult role and an individual's orientation toward an adult role. The older the ages at entry into adult roles, the lower the probability that entry into adult roles will occur prior to exit from transitional roles.

Influences Via Involvement in Transitional Roles

Since the age at which an individual last leaves the role of full-time student is a function of (1) the amount of education attained, (2) age-grade retardation/acceleration, and (3) the extent to which schooling is obtained on a continuous, full-time basis, variables affecting these sources of variance in the age at leaving full-time schooling are likely to affect the order of events in the transition to adulthood. Similarly, variables affecting time spent in the military are likely to affect the order of events as well.

Educational Attainment. The age at last leaving full-time schooling is primarily a function of the amount of education attained. Consequently, educational attainment can be expected to have an important effect on the probability that adult roles will be entered prior to exit from school. Educational attainment is likely to increase the probability of entry into the labor force prior to exit from school because schooling is more likely to be interrupted for a period of work experience at higher levels. Even when schooling is obtained continuously, it is more likely to be financed through labor force participation at higher levels. Thus, as educational attainment increases, the probability of entry into the labor force prior to exit from school can be expected to increase.

Similiarly, educational attainment is likely to increase the probability of entry into adult family roles prior to the occurrence of the nonfamilial role changes of exit from school and entry into the labor force. In a society

in which premarital sexual activity is not universally regarded as acceptable and individuals have exposure to potential mates, marriage is unlikely to be delayed much beyond the age when sexual drive is at its peak. Thus, as educational attainment increases, the likelihood that marriage will occur prior to exit from school and entry into the labor force can be expected to increase. The occurrence of marriage prior to exit from school and entry into the labor force, in turn, can be expected to increase the likelihood that entry into parenthood will occur prior to nonfamilial role changes, since marriage increases the probability that a pregnancy will occur and be brought to term. Even when sexual activity is initiated prior to marriage, educational attainment can be expected to increase the probability of entry into adult family roles prior to exit from school and entry into the labor force because it increases the duration over which a premarital pregnancy can occur and precipitate entry into marriage and parenthood. It also increases the duration over which relationships may evolve to a point where marriage becomes a logical step in the establishment of commitment.

Another reason educational attainment is likely to increase the probability of entry in adult family roles prior to exit from school and entry into the labor force is that entry into marriage offers a means of financing higher education. Although this means of financing education is open to both sexes, it is used most often by husbands, whose wives work to put them through graduate or professional school. Educational attainment therefore can be expected to bear a stronger relationship to the sequencing of familial and nonfamilial role changes for males than females.

Finally, educational attainment is likely to increase the probability of entry into adult family roles prior to exit from school because an interruption in schooling is more likely to occur at higher levels of

education. Entry into the labor force usually occurs upon such an interruption and facilitates entry into adult family roles. Thus, because educational attainment is asociated with an increase in the probability of an interruption in schooling, it increases the probability that entry into adult family roles will occur prior to exit from school.

Because educational attainment affects the sequencing of role changes, determinants of educational attainment are likely to have indirect effects on the sequencing of role changes via their effect on educational attainment. Variables exerting these indirect effects are likely to be variables such as socioeconomic background, number of siblings, intelligence, grade-point average, dating behavior, and educational and occupational expectations (Alexander and Eckland, 1974; Sewell and Hauser, 1975:91-105; Hauser et al., 1976; Marini, 1978b). Some of these variables may have direct effects on the sequencing of role changes as well, since they may have effects on the timing of exit from transitional roles and the timing on entry into adult roles that are independent of the effects they exert via educational attainment.

Age-grade Retardation/Acceleration. The age at which an individual leaves the role of full-time student is a function not only of educational attainment but of variation in the process by which education is attained. Thus, with educational attainment held constant, age-grade retardation or acceleration may affect the sequencing of role changes. Research by Featherman and Carter (1976) indicates that intelligence and grade-point average exert negative effects on age-grade retardation at age 17 and that about half of the effect of intelligence is mediated by grade-point average. Students who are more intelligent and who get better grades are less likely to be age-grade retarded. This finding suggests that those who are more intelligent and who get better grades are likely to finish a given level of schooling earlier and

may therefore be less likely to enter adult roles prior to exit from school. Analysis of the effects of intelligence and grade-point average on the timing of entry into adult roles based on the data set analyzed here, however, indicated that only intelligence could be viewed as behaving as a measure of age-grade retardation or acceleration (Marini, 1982).

Extent to Which Schooling is Continuous and Full-Time. The rate of progress through school is affected not only by age-grade retardation/acceleration at the primary and secondary school levels but by the extent to which higher education is obtained continuously and full-time. An interruption in full-time schooling raises the age at last leaving full-time education and thereby increases the probability of entry into adult roles prior to exit from school. The extent to which education is obtained continuously and full-time can be seen as affected by both the availability of the opportunity to continue schooling on a full-time basis and an individual's desire to do so. Variables which measure or affect the availability of financial support for the continuation of education are therefore likely to affect the probability of entry into adult roles prior to exit from the role of full-time student. As a direct measure of the availability of financial resources, parental income is likely to lower the age at last leaving full-time education and thereby reduce the probability of entry into adult roles, particularly entry into the adult worker role, prior to exit from school. Grade-point average may have a similar effect since it affects access to scholarships.

An individual's orientation toward education also can be seen as affecting the sequencing of role changes via its effect on the extent to which education is obtained continuously and full-time. Among those who ultimately attain the same level of education, those who are socialized to place a higher value on

education, who attach greater importance to academic performance, and who have higher educational and occupational expectations in high school are less likely to interrupt their schooling. Consequently, they are less likely to enter the labor force prior to leaving the full-time student role and less likely to enter adult family roles prior to leaving school and entering the labor force. Variables reflecting differences in educational orientation, such as socioeconomic background, academic performance, and educational and occupational expectations (Kerckhoff, 1974; Alexander and Eckland, 1974; Sewell and Hauser, 1975; Hauser et al., 1976; Marini, 1978b), are therefore likely to affect the sequencing of role changes, even with the effect of educational attainment controlled.

Military Service. By occupying males in the transitional role of soldier, military service is likely to affect the ordering of events in the transition to adulthood for males. During periods of military conscription, many males undergo a short period of military service prior to entering the civilian labor force. Although there is little reason to expect that entry into the military affects the timing of entry into the full-time worker role (i.e., entry into either a full-time military or full-time civilian job), the fact that military service ususally precedes entry into the civilian labor force is likely to cause military service to have a delaying (positive) effect on the timing of entry into the civilian labor force. Military service is therefore likely to decrease the probability of entry into the civilian labor force prior to exit from school. Because military serivce limits access to potential mates and makes it inconvenient to marry, it is also likely to have a delaying effect on entry into adult family roles (Hogan, 1978a). Consequently, it is likely to decrease the probability of entry into adult

family roles prior to the nonfamilial role changes of exit from school and entry into the civilian labor force.

Although entry into the military can be expected to have a delaying affect on adult role entry and thereby reduce the probability of entry into adult roles prior to exit from transitional roles, the longer an individual spends in the military, the greater the probability that entry into adult family roles will occur prior to exit from the military and entry into the civilian labor force. Just as the duration of time spent in school raises the age at leaving school and thereby increases the probability of entry into adult roles prior to leaving the transitional role of student, so the duration of time spent in the military raises the age at leaving the military and can be expected to increase the probability of entry into adult family roles prior to leaving the transitional role of soldier.

Influences Via the Timing of Adult Role Entry

The order of events in the transition from adolescence to adulthood is affected not only by influences operating through effects on involvement in transitional roles but by direct influences on the timing of adult role entry. These include variables measuring the opportunity to enter an adult role and an individual's orientation toward an adult role.

Opportunity to Enter an Adult Role. The opportunity to enter an adult role must be available if a role change is to occur. To obtain a full-time job, there must be a job opening. To marry, a potential marriage partner must be available. To have a child, an individual must be fecund, engage in sexual intercourse, and, in most cases, be married. Variables which affect the opportunity to enter adult roles therefore affect the timing of adult role entry.

It is to be expected, for example, that relationships with members of the opposite sex affect the timing of entry into adult family roles and, thereby, the probability that entry into adult family roles will occur prior to the nonfamilial role changes of exit from school and entry into the labor force. These effects are likely to arise because relationships with the opposite sex during adolescence affect the probability that a potential marriage partner is available at an early age and, therefore, the opportunity to marry and have a child at an early age. Those who start dating early, who date frequently, and who go "steady" in high school are more likely to enter into marriage and parenthood at early ages (Marini, 1978b, 1982). Consequently, they are more likely to enter into marriage and parenthood prior to leaving school and entering the labor force. The occurrence of a premarital pregnancy, which is indicative not only of fecundity but of the experience of sexual intercourse, is also likely to affect the timing of entry into adult family roles by precipitating entry into marriage and parenthood earlier than they would be entered otherwise. Premarital pregnancy can be expected to increase the probability of entry into adult family roles prior to exit from school and entry into the labor force. Premarital pregnancy is particularly likely to affect the probability of entry into both marriage and parenthood prior to the occurrence of nonfamilial role changes since its negative effect on age at first birth is likely to be greater than its negative effect on age at first marriage.

Orientation to an Adult Role. An individual's orientation to a particular adult role is likely to affect the timing of adult role entry as well. Although there is some evidence to suggest that the expectation of spending a major portion of one's adult life engaged in the occupation of housewife may lower the ages at entry into marriage and parenthood for females because entry

into these roles is a prerequisite for spending much of one's life as a wife and mother (Cherlin, 1980), expecting to become a housewife was found to have no direct effect on the timing of entry into adult roles in the data set analyzed here (Marini, 1982). To the extent that the expectation of becoming a housewife affects the sequencing of role changes, it is therefore likely to do so by affecting involvement in the transitional role of student and not by affecting the timing of adult role entry.

For both sexes, early and frequent dating in high school may be indicative not only of the availability of the opportunity to enter adult family roles at an early age but of a positive orientation toward relationships with the opposite sex and investment in a marital relationship. Dating behavior in high school may affect the timing of entry into adult family roles and the sequencing of familial and nonfamilial role changes because it reflects a strong interest in relationships with the opposite sex and a predisposition toward marriage. Similarly, a positive orientation toward the parental role may hasten entry into parenthood and thereby increase the probability of entry in adult family roles prior to the occurrence of nonfamilial role changes. Since there is evidence to suggest that number of siblings has a positive effect on orientation toward the parental role (Duncan et al., 1965; Hendershot, 1969; Marini, 1980), number of siblings may affect the sequencing of familial and nonfamilial role changes via a negative effect on age at first birth (Marini, 1982).

A LIFE-CYCLE MODEL OF THE INFLUENCE PROCESS

To test the above hypotheses, a life-cycle model of the process by which the order of events in the transition to adulthood is determined was estimated. The order of events was assumed to be a linear function of three

categories of influences arising earlier in the life cycle: (1) background, or exogenous, influences; (2) experiences and expectations during high school; and (3) post-high school experiences mediating the transition to adulthood. Because these three categories of independent variables are ordered in time and in the direction of their effects on one another, some independent variables were assumed to have indirect as well as possible direct effects on the order of events. Each of the three categories of variables is described in turn below.

Background Influences

The background influences, or exogenous variables, included in the model are measures of socioeconomic background, number of siblings, and intelligence. Father's education, mother's education, father's occupational prestige, and family income are used to measure socioeconomic background.[3] The contextual effect of the high school is not considered in the model because only 9% of the variance in educational attainment was found to lie between schools, and differences between schools added only about 1% to the percent of variance explained by the individual's socioeconomic background and intelligence. Since no major between-school differences in educational attainment were found, no important differences in the order of events during the transition to adulthood were expected.

High School Experiences and Expectations

Measures of both academic and nonacademic influences during high school comprise the second stage of the model. Causal relationships are not postulated among these variables, but they are hypothesized to be influenced by parental socioeconomic status, number of siblings, and intelligence. The variables in this stage of the model include measures of grade-point average,

age at first date, frequency of dating at the time of the adolescent survey, frequency of dating during the last two years of high school, whether the respondent was going "steady" at the time of the adolescent survey, whether the respondent ever went "steady," college plans, and the prestige of the occupation the respondent expected to hold fifteen years after high school. For females, a variable measuring whether the respondent expected her occupation to be that of "housewife" fifteen years after high school is included. Other variables were considered in preliminary analyses but were not retained in the final model because they did not have direct efects on the sequencing of role changes. These included measures of parental encouragement to go to college, high school curriculum, friends' college plans, academic effort, and military expectations (for males).

Post-High School Experiences

The final category of variables included in the model consists of influences arising after high school that are likely to affect the sequencing of role changes. These variables are assumed to be affected by the exogenous background variables and by experiences and expectations during high school. They include educational attainment, occurrence of a premarital pregnancy, and, for males, entry into military service. Because some nonlinearity was expected in the effect of educational attainment on the order of events, educational attainment was measured by a set of dummy variables rather than by a single continuous variable.

MEASUREMENT AND ESTIMATION

Details on the measurement of independent variables in the model are presented in Table 3. These variables are examined in relation to five

measures of the order of events: (1) entry into the civilian labor force prior to the completion of full-time schooling, (2) entry into marriage prior to the completion of full-time schooling, (3) entry into marriage prior to the completion of full-time schooling and entry into the civilian labor force, (4) entry into marriage and parenthood prior to the completion of full-time schooling, and (5) entry into marriage and parenthood prior to the completion of full-time schooling and entry into the civilian labor force. Data on these dependent variables were presented earlier in Table 2.

TABLE 3 ABOUT HERE

Since the dependent variables are dichotomous, a logistic function was estimated by maximum likelihood. The logistic function is

$$P_j = 1/1 + e^{-(\beta_{0j} + \beta_{1j}X_1 + \beta_{2j}X_2 + \beta_{3j}X_3 + u_j)}$$

where P_j = the probability that a particular order of events occurred, X_1 is a vector of exogenous variables, X_2 is a vector of variables measuring high school influences, X_3 is a vector of variables measuring post-high school influences, the β_{ij} are vectors of parameters, and u_j is an unobserved disturbance. The estimated partial derivatives of P_j with respect to each variable, evaluated at the mean $\bar{P}_j$, are presented in the tables of results. Because the model is a multi-stage one, in which influences are ordered in time and in the direction of their effects on one another, both direct and total (combined direct and indirect) effects are presented. Estimates of the total effects were obtained when variables in the same and prior stages of the model were included in the equation (Alwin and Hauser, 1975).

RESULTS

Estimates of effects on the probability of entry into the civilian labor force prior to last exit from full-time schooling are presented by sex in Table 4. Estimates of effects on two measures of the probability of entry into marriage prior to nonfamilial role changes are presented by sex in Table 5. Finally, estimates of effects on two measures of the probability of entry into both marriage and parenthood prior to nonfamilial role changes are presented by sex in Table 6. The results are discussed below in relation to the hypotheses advanced earlier.

TABLES 4, 5, AND 6 ABOUT HERE

Influences Via Involvement in Transitional Roles

Effect of Educational Attainment on the Sequencing of Exit From School and Entry into the Labor Force. As shown in Table 4, educational attainment has an effect for both sexes on the probability of entering the labor force prior to leaving full-time schooling for the last time. Those who go further in school are more likely to enter the labor force before leaving school. However, there is some nonlinearity in the effect. There is no significant difference in the probability of entering the labor force before leaving full-time schooling between those who do and those who do not finish high school. Those who attain education beyond high school, however, are significantly more likely than those with lesser educational attainments to enter the labor force before leaving full-time schooling. Those who attain education beyond high school but no college degree and those who attain a college degree are about equally likely to enter the labor force before

completing full-time education. Males with these levels of educational attainment, however, are more likely to enter the labor force before finishing full-time schooling than females with comparable levels of educational attainment. This sex difference is consistent with the fact that males are more likely than females to return to full-time schooling after an initial interruption (Marini, 1981b). Those who attain education beyond college are even more likely than college graduates to enter the labor force before finishing full-time education. The effect of graduate education on the sequencing of exit from school and entry into the labor force is about equal for the two sexes.

Together, these findings indicate that with each major increment in educational attainment a higher percentage of students experience a period of full-time labor force participation prior to finishing full-time education. The overall effect of educational attainment on entry into the labor force prior to exit from school is about the same for the two sexes, although attaining some post-high school education or a college degree increases the probability of entering the labor force prior to leaving full-time education more for males than females.

Several variables measuring influences arising at earlier stages of the life cycle exert <u>indirect</u> effects via educational attainment. Socioeconomic background, for example, has some indirect positive effect. For females, its effect is evident in the significant total effect of mother's education because mother's education has no significant direct effect. For males, it is evident in the nonsignificant effect of family income, which is a product of an indirect positive effect and a direct negative effect. Other variables exerting indirect effects via educational attainment include: intelligence, grade-point average, and educational expectation, which exert positive effects

for both sexes; occupational expectation, which exerts a small positive effect for males; and frequency of dating and the expectation of becoming a housewife, which exert small negative effects for females.

Effect of Educational Attainment on the Sequencing of Familial and Nonfamilial Role Changes. As shown in Tables 5 and 6, educational attainment also has an effect on the sequencing of familial and nonfamilial role changes for both sexes. The nature of the effect varies with the measure of sequencing and differs for the two sexes. Educational attainment has a greater effect for both sexes on the probability of experiencing familial role changes prior to last leaving full-time education than on the probability of experiencing familial role changes prior to both last leaving full-time education and entering the labor force. This difference arises because familial role changes are often preceded by entry into the civilian labor force when they occur prior to last leaving full-time education. In fact, labor force participation is likely to provide the means of financing entry into adult family roles. Comparing the results presented in Tables 5 and 6 indicates that educational attainment also has a greater effect for both sexes on the probability of entering into marriage prior to experiencing nonfamilial role changes than on the probability of entering into both marriage and parenthood prior to experiencing nonfamilial role changes. That is, the probability of entry into both marriage and parenthood increases less with educational attainment than does the probability of entry into marriage alone. This difference arises because it is easier to combine marriage than to combine both marriage and parenthood with the continuation of education.

Sex differences are present in the effect of educational attainment on each measure of the sequencing of familial and nonfamilial role changes. As educational attainment increases, the probablity of entry into adult family

roles prior to nonfamilial role changes consistently increases more for males than females. For males, the probability of experiencing familial role changes prior to nonfamilial role changes tends to increase with successive increments in education. Although there is no significant difference in the sequencing of familial and nonfamilial role changes between those who do and those who do not finish high school, the probability of experiencing familial role changes prior to nonfamilial role changes increases at successively higher levels of education.

For females, the effect of educational attainment on the sequencing of familial and nonfamilial role changes is smaller and varies more with the measure of sequencing examined. As for males, there is no significiant difference in the sequencing of familial and nonfamilial role changes between those who do and those who do not finish high school. Females with some post-high school education, however, are consistently more likely to experience familial role changes prior to nonfamilial role changes than those with lower levels of education. Unlike the effect of education for males, the probability of experiencing familial role changes prior to nonfamilial role changes does not increase consistently with successive increments in education for females. Those who attain education beyond high school but no college degree and those who attain a college degree are about equally likely to marry prior to completing full-time education. Only among those who attain education beyond college is there an additional increment in the probability of marrying prior to completing full-time education. On other measures of the sequencing of familial and nonfamilial role changes, increments in the probability of experiencing familial role changes prior to nonfamilial role changes are nonexistent or small among those with more than a high school education. Thus, for females, the major effect of educational attainment on

the sequencing of familial and nonfamilial role changes is an increase in the probability of experiencing familial role changes prior to nonfamilial role changes among those with more than a high school education.

The sex differences observed in the relationship of educational attainment to the sequencing of familial and nonfamilial role changes are consistent with sex differences in marital and parental roles. Traditionally, women have been responsible for most household work and child care, assuming a nurturant and supportive role; men have been responsible for working outside the home to financially support the family. Marriage and parenthood are therefore less compatible with the continuation of education by women than men. Although the continuation of education by men does not permit direct fulfillment of the traditional male role of provider, its future payoff for the well-being of the family causes it to be viewed as an investment in the future. A wife will often adopt the provider role to support her husband in school. Women's educational and occupational pursuits, however, tend to be viewed as secondary to those of their husband because traditional role relationships within marriage make household work and child care a woman's primary responsibility. Women who pursue high levels of education are therefore less likely to enter marriage and parenthood prior to completing their schooling.

A number of variables in the model exert indirect effects on the sequencing of familial and nonfamilial role changes via their effect on educational attainment. Socioeconomic background, number of siblings, intelligence, grade-point average, and educational expectation have indirect effects for both sexes. Occupational expectation has a significant indirect effect for males, and the expectation of becoming a housewife has a significant indirect effect for females. With the exception of the effects of

number of siblings and housewife expectation, which are negative, the indirect effects observed are positive.

Age-grade Retardation/Acceleration. With the effect of educational attainment held constant, intelligence does not have a direct negative effect on the probability of entry into adult roles prior to exit from transitional roles, as hypothesized. It exerts no direct effect on the sequencing of familial and nonfamilial role changes for either sex and no direct effect on the sequencing of exit from school and entry into the labor force for females. It has a small direct positive effect on the probability of entry into the labor force prior to exit from school for males. This effect may arise because those with high intelligence, who are likely to be age-grade accelerated, are more likely to interrupt their schooling for a period of labor force participation. When the effect of an interruption in schooling of more than one academic year was considered simultaneously (not shown in Table 4), intelligence did not maintain a significant direct effect on the probability of entry into the labor force prior to exit from school. Thus, there is no evidence to support the hypothesis that age-grade acceleration decreases the probability of entry into adult roles prior to exit from transitional roles by reducing the ages at exit from transitional roles.

Extent to Which Schooling is Continuous and Full-Time. With the effect of educational attainment held constant, the income of the family of origin has a direct negative effect on the probability of entry into adult roles prior to exit from school for males. This effect is observed for the sequencing of exit from school and entry into the labor force in Table 4 and for the sequencing of exit from school and entry into adult family roles on the left-hand side of Tables 5 and 6.

The observed effect of parental income on the sequencing of exit from school and entry into the labor force confirms the hypothesis that the availability of financial resources reduces the probability of entry into the labor force prior to exit from full-time schooling for males. The observed effect of parental income on the sequencing of exit from school and entry into adult family roles is likely to be related to the effect of parental income on the sequencing of exit from school and entry into the labor force. Parental income may decrease the likelihood of entry into adult family roles prior to exit from school because it decreases the likelihood of entry into the labor force prior to exit from school. Entry into the labor force is likely to facilitate entry into adult family roles not only by providing financial resources but by initiating movement into adult roles and thereby encouraging entry into adult family roles. Parental income may also decrease the probability of entry into adult family roles prior to exit from school by enabling parents to retain more control over the timing of their children's familial role changes. By threatening to withdraw financial support if children marry prior to finishing school, parents with the income to support their children's education can encourage the completion of schooling prior to entry into adult family roles. Recent research by DeVanzo and Kobrin (1982) supports this hypothesis, since it indicates that members of the high school graduating class of 1972 who were married by 1976 received essentially no financial support from their parents. Finally, parental income may negatively affect the probability of entry into adult family roles prior to exit from school by decreasing the incentive to marry as a means of obtaining financial support to continue schooling. Support of education by a spouse -- particularly, the husband's education by the wife -- is a common alternative to parental support. By decreasing the need for such alternative support,

parental income may reduce the probability of entry into adult family roles prior to the completion of schooling.

Grade-point average in high school, which affects access to financial aid for higher education, also has a direct negative effect on the probability of entry into the labor force prior to exit from school. As shown in Table 4, this effect is observed for both sexes but is greater for males than females. Since those who get better grades in high school are more likely to receive financial aid through scholarships, grade-point average, like parental income, decreases the probability that entry into the labor force is necessary to support the continuation of education.

Grade-point average, however, may also affect the probability of entry into the labor force prior to exit from school because it reflects a student's educational orientation. Those who get better grades in high school are more likely to be motivated to go to college and to plan to go to college immediately after high school. Consequently, they are less likely to interrupt their schooling after high school for a period of labor force participation.

In contrast to its negative effect on the probability of entry into the labor force prior to exit from school, grade-point average has a small positive effect on the probability of entry into marriage prior to exit from school and entry into the labor force for males (Table 5). This effect, like the positive effects of occupational expectation on the probability of entry into adult family roles prior to nonfamilial role changes for males in Tables 5 and 6, arises because it reflects the duration of post-college education, which is unmeasured. Males who get good grades in high school and who expect to enter high prestige jobs tend to attain more post-college education (specifically, Ph.D. and advanced professional degrees) than those who get

lower grades and have lower occupational expectations. Consequently, they spend more time in school and are more likely to experience familial role changes prior to nonfamilial role changes. When a variable measuring receipt of a Ph.D. or advanced professional degree was entered into the analysis (not shown in Tables 5 and 6), neither grade-point average nor occupational expectation maintained a direct positive effect on the probability of entry into adult family roles prior to nonfamilial role changes.

As shown in Tables 5 and 6, females who expect to become housewives are somewhat less likely to experience familial role changes prior to nonfamilial role changes. This effect arises because those who expect to become housewifes are less likely to return to school after leaving. When the effect of an interuption in schooling of more than one academic year was considered simultaneously (not shown in Tables 5 and 6), housewife expectation maintained no significant direct effect on the sequencing of familial and nonfamilial role changes. Thus, it is because those who expect to become housewives are less likely to experience an interruption in schooling that they are somewhat more likely to finish school before entering adult family roles.

Military Service. As expected, entry into the military is shown to have a small, negative effect on the probability of entry into the civilian labor force prior to exit from school for males in Table 4. Since military service ususally intervenes between schooling and entry into the civilian labor force, entry into the military decreases the probability that entry into the civilian labor force will occur prior to exit from school.

Entry into the military also has a small, negative effect for males on the probability of entry into marriage prior to nonfamilial role changes in Table 5. This effect is likely to arise because entry into the military delays entry into marriage, making it less likely that marriage will occur prior to

nonfamilial role changes. The effect of duration spent in the military was not considered in the analysis. If it had been, a positive effect of length of military service on the probability of experiencing familial role changes prior to nonfamilial role changes would have been expected, since it was hypothesized that the duration spent in a transitional role would increase the probability of entry into adult family roles prior to the occurrence of nonfamilial role changes.

Influences Via the Timing of Adult Role Entry

Opportunity to Enter an Adult Role. Evidence that the opportunity to enter an adult role affects the timing of adult role entry and thereby the sequencing of role changes is contained in Tables 5 and 6. Dating behavior and premarital pregnancy are important determinants of the probability that familial role changes precede nonfamilial role changes for both sexes. Age at first date has a negative effect, since those who start dating at older ages tend to marry and have children later, thereby reducing the probability that familial role changes precede nonfamilial role changes. In contrast, the frequency of dating in high school has a positive effect because those who date frequently tend to marry and have children at relatively young ages, increasing the probability of familial role changes prior to nonfamilial role changes. Similarly, going "steady" has a positive effect because those who go "steady" tend to enter adult family roles at relatively young ages and are more likely to experience familial role changes prior to nonfamilial role changes. All of these effects are likely to arise because dating behavior in adolescence is indicative of the likelihood that a relationship has been established with a potential marriage partner at a relatively young age and, therefore, of the availability of the opportunity to marry and become a parent

at a relatively young age. Availability of the opportunity to enter adult family roles reduces the ages at entry into these roles and increases the probability that entry into adult family roles will occur prior to nonfamilial role changes.

The frequency of dating in high school also has a small positive effect on the probability of entry into the labor force prior to exit from school for females in Table 4. This effect may arise because frequent dating hastens entry into marriage and increases the probability of an interruption in schooling for females.

Premarital pregnancy has no significant effect on the probability of entry into marriage prior to exit from school and entry into the labor force, but it increases the probability that entry into both marriage and parenthood will occur prior to these nonfamilial role changes. The latter effect arises because premarital pregnancy precipitates entry into parenthood earlier than it would be entered otherwise and thereby increases the likelihood that entry into both marriage and parenthood will occur prior to nonfamilial role changes. The effect of premarital pregnancy on the sequencing of familial and nonfamilial role changes is greater for males than females because the occurrence of a premarital pregnancy reduces age at the birth of the first child more for males than females.

Orientation to an Adult Role. There is some evidence to support the hypothesis that an individual's orientation to an adult role affects the sequencing of role changes by affecting the timing of adult role entry. With the effect of educational attainment held constant, educational expectation in high school has a negative effect on measures of the probability of entry into adult family roles prior to leaving school and entering the labor force in Tables 5 and 6. This effect is observed on at least one measure of the

sequencing of familial and nonfamilial role changes for both sexes. Thus, among those who ultimately attain the same amount of education, those who plan to go to college are less likely than those who do not plan to go to college to enter adult family roles prior to completing full-time education. This effect is likely to arise because low educational expectations are associated with expectations to marry and have children at relatively young ages. Since the latter expectations are unmeasured in the analysis, educational expectation may serve as a proxy for an individual's orientation to the timing of entry into adult family roles. Such an interpretation is likely because the effect persisted when a control for the occurrence of an interruption in education was introduced into the analysis (not shown in Tables 5 and 6). If educational expectation affected the sequencing of role changes by affecting the extent to which schooling was obtained continuously and thereby affecting the age at completing full-time education, it would not have maintained a direct effect on the sequencing of role changes when the effect of an interruption in education was considered simultaneously.

The effects of dating behavior described above may arise not only because they are indicative of the availability of the opportunity to enter adult family roles but also because they are indicative of an individual's orientation toward the marital role. Specifically, early and frequent dating in adolescence may reflect a strong interest in relationships with the opposite sex and a predisposition toward marriage. Although number of siblings was hypothesized to have a possible effect on the sequencing of familial and nonfamilial role changes because it may affect an individual's orientation toward the parental role, it was found to have no effect on the sequencing of role changes.

CONCLUSIONS

Analysis of the ordering of role changes in the transition from adolescence to adulthood indicates that there is considerable variation in the temporal sequencing of events. Although about half of each sex in the cohorts studied experienced exit from school first, followed in order by entry into the labor force, entry into marriage, and entry into parenthood, the other half experienced role changes in other sequences. Variation in the order of events was found to parallel variation in social class, particularly in educational attainment. This relationship suggests that the mode of the ordering distribution is a distributional characteristic of the sample that arises largely from the social class distribution. Those experiencing events in the modal sequence tend to be those who do not continue their educations beyond high school -- i.e., those at the mode of the educational distribution. Just as the mode of the educational distribution is not assumed to be socially normative, the mode of the ordering distribution should not be assumed to be socially normative.

An alternative to assuming a normative ordering pattern and viewing deviation from that pattern as nonnormative is to focus on the ordering of particular types of role changes that are substantively meaningful because of the nature of the events involved. Three types of variation in the ordering of role changes were seen as being of particular interest: (1) variation in the sequencing of exit from school and entry into the labor force, (2) variation in the sequencing of entry into marriage and entry into parenthood, and (3) variation in the sequencing of familial (entry into marriage and parenthood) and nonfamilial (exit from school and entry into the labor force) role changes. Because little variation was observed in the sequencing of

entry into marriage and entry into parenthood in the sample studied, the analysis focused on the sequencing of exit from school and entry into the labor force and on four measures of the sequencing of familial and nonfamilial role changes.

The order of events in the transition from adolescence to adulthood was examined as an outcome of a causal process initiated at birth and elaborated over the early stages of the life course. Experiences during adolescece and the period of transition to adulthood were found to exert the strongest direct effects on the order of events. Educational attainment is the most important determinant of the sequencing of role changes. Those who attain high levels of education are more likely to enter the labor force before leaving full-time schooling. They are also more likely to enter adult family roles before leaving full-time schooling and entering the labor force. These effects have important implications for research on this period of the life cycle. On the surface, it would appear reasonable to assume that those who enter adult roles prior to the completion of schooling attain less education than those who finish school first because adult role entry interferes with education. The results presented indicate that this is not the case because those who attain high levels of education are more likely to enter adult roles prior to the completion of education. Entry into adult roles prior to the completion of education -- or, alternatively, the continuation of education after entry into adult roles -- is positively associated with educational attainment not because education and adult role activities are more compatible at higher levels of education but because a protracted course of education increases the probability that adult roles will be entered before the completion of schooling.

Because educational attainment affects not only the sequencing but the timing of role changes during the transition to adulthood, the timing and sequencing of role changes are related. High educational attainment not only increases the probability of entry into adult roles prior to the completion of full-time schooling but delays entry into adult roles (Marini, 1982). Those who enter adult roles prior to the completion of schooling therefore tend to do so at relatively late ages. This relationship has important implications for research on the timing of role changes. Specifically, research which attempts to examine the effect of the timing of adult role entry on educational attainment by controlling for the amount of education attained prior to adult role entry and examining the effect of the timing of adult role entry on the amount of education attained after adult role entry (as in Alexander and Reilly, 1981) poses two problems. First, anticipation of adult role entry may affect educational attainment prior to adult role entry, making it impossible to distinguish between the effect of educational attainment on the timing of adult role entry and the effect of the timing of adult role entry on educational attainment on the basis of whether the education occurred before or after adult role entry. Second, just as those who attain high levels of education are more likely to enter adult roles prior to the completion of education, those who enter adult roles late are more likely to do so prior to the completion of education, even with the effect of educational attainment prior to adult role entry -- and, therefore, the selectivity effect of educational attainment on the sequencing of role changes -- held constant. The timing of adult role entry therefore is related to the amount of education attained after entry, not because the timing of adult role entry has a causal effect on the total amount of education attained but because those who enter adult roles at late ages are more likely to enter

adult roles prior to the completion of schooling. In fact, it is not clear why the timing of adult role entry should exert a causal effect on education attained after adult role entry since the age at which an adult role is entered should not affect the degree to which fulfillment of adult role requirements and fulfillment of educational requirements are compatible. To the extent that the timing of adult role entry is related to the amount of education attained after entry, the relationship is likely to arise because the timing and sequencing of role changes are related.

Variables other than educational attainment that affect the rate of progress through school also exert direct effects on the sequencing of role changes. The income of the family of origin was shown to have a direct negative effect on the probability of entry into adult roles prior to the completion of full-time schooling for males. This effect can be seen as arising because parental income facilitates continuous progress through school and decreases the need to enter adult roles in order to finance education. Grade-point average, which affects access to aid for education and reflects a student's educational orientation, also has a direct negative effect on the probability of entry into the labor force prior to exit from school for both sexes. Those who get good grades in high school are less likely to experience an interruption in schooling for a period of labor force participation. Like variables affecting involvement in the transitional role of student, entry into the transitional role of soldier was found to affect the sequencing of role changes for males. Military service had a small direct negative effect on the probability of entry into the civilian labor force prior to exit from school and on the probability of entry into marriage prior to nonfamilial role changes.

Other variables were found to affect the sequencing of familial and nonfamilial role changes because they exerted direct effects on the timing of entry into adult family roles. Early and frequent dating during adolescence and the occurrence of a premarital pregancy increased the probability of entry into adult family roles at relatively young ages, thereby increasing the probability that familial role changes occurred prior to nonfamilial role changes. These effects can be seen as arising because dating behavior and premarital pregnancy affect the opportunity or necessity of entering adult family roles at relatively young ages, as well as the individual's desire to do so. Low educational expectations, which are associated with expectations for early entry into adult family roles, also were shown to increase the probability of entry into adult family roles prior to nonfamilial role changes.

FOOTNOTES

[1]The sample considered here is the sample which formed the basis for the follow-up study. Most of Coleman's analysis was based on students in ten public high schools, nine of which were coed and one of which was all-male. Coleman (1961:77-80) also presented some comparative data for students in two private coed high schools. The follow-up study is based on students in the nine public coed high schools analyzed extensively by Coleman and in one of the two private schools (University High) for which some data were presented.

[2]The data for the one private school were collected in the fall of 1958.

[3]Mother's occupational prestige was not retained in the model because it had no significant effect on the sequencing of role changes during the transition to adulthoood.

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Table 1. Percent Experiencing Various Sequencing Patterns, by Sex

Pattern Number	Order of Events[a]	Percent of Total Sample			Percent of Those for Whom Order of Four Events is Known					
		F[b]	M_t	M_c	F		M_t		M_c	
1	ELMB	40.4	37.7	36.0	43.3	49.6	42.5	51.5	40.7	48.7
2	ELM	5.9	8.0	8.0	6.3		9.0		9.0	
3	EL	6.0	11.1	10.9	---		---		---	
4	LEMB	7.0	11.6	10.6	7.5	9.2	13.1	16.9	12.0	15.2
5	LEM	1.6	3.4	2.9	1.7		3.8		3.2	
6	EMBL	4.0	0.2	2.2	4.3	12.6	0.2	0.3	2.5	3.4
7	EMB	7.8	0.1	0.8	8.3		0.1		0.9	
8	EMLB	5.8	3.6	3.6	6.2		4.0		4.0	
9	LMEB	2.9	3.6	4.4	3.1	4.5	4.0	6.2	4.9	7.0
10	LME	1.3	2.0	1.9	1.4		2.2		2.1	
11	LMBE	1.9	5.3	3.2	2.0		6.0		3.6	
12	MELB	2.5	5.1	5.0	2.7		5.8		5.6	
13	MBEL	0.8	2.3	2.6	0.8	2.9	2.6	2.7	2.9	3.3
14	MBL	2.0	0.1	0.4	2.1		0.1		0.4	
15	MEB	2.2	0.0	0.1	2.3		0.0		0.1	
	Other than above[c]	7.9	5.9	7.4	8.0		6.6		8.1	
	Total	100.0	100.0	100.0	100.0		100.0		100.0	
	(N)	(3,433)	(3,065)	(3,065)	(3,203)		(2,717)		(2,712)	

[a] The order of events is indicated by a sequence of letters, where E = last exit from full-time education, L = entry into the first full-time job held for at least six months, M = entry into first marriage, and B = entry into parenthood.

[b] F = females; M_t = males, where L = entry into a military or civilian job; M_c = males, where L = entry into a civilian job.

[c] Other ordering patterns each describe no more than 1 percent of the total sample for either sex.

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Table 2. Percent Experiencing Particular Variations in the Sequencing of Events, by Sex

Order of Events	Percent[a]	
	Females	Males
Entry into the civilian labor force[b] prior to last exit from full-time education	22.2 (3,160)	30.6 (3,011)
Entry into marriage prior to last exit from full-time education	18.5 (3,429)	23.1 (3,050)
Entry into marriage prior to last exit from full-time education and entry into the civilian labor force	7.7 (3,409)	9.7 (3,005)
Entry into marriage and parenthood prior to last exit from full-time education	10.7 (3,153)	13.2 (2,996)
Entry into marriage and parenthood prior to last exit from full-time education and entry into the civilian labor force	2.6 (3,127)	3.9 (2,948)

[a]The number of cases on which each percent is based is shown in parentheses.

[b]Entry into the civilian labor force is defined as entry into the first full-time civilian job held for at least six months.

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Table 3. Measurement of Independent Variables in Model Predicting the Order of Events in the Transition to Adulthood

Variable Label	Variable Name	Units of Measurement	Source[a]	Description	Mean[b] Females	Mean[b] Males	Standard Deviation[b] Females	Standard Deviation[b] Males
FAED	Father's education	Years of schooling completed	AQ		11.8	11.6	3.53	3.43
MOED	Mother's education	Years of schooling completed	AQ		11.6	11.7	2.94	2.84
FAOCC	Father's occupational prestige	NORC occupational prestige scores	F	The NORC scores were reconciled to the 1970 Census occupation and industry codes for detailed titles (Temme, 1973).	44.26	43.97	14.79	14.23
FAMINC	Family income	A scale ranging from 1 to 7	PQ		4.02	3.98	1.43	1.38
SIBS	Number of siblings	Persons	PQ		2.19	2.22	1.77	1.80
IQ	Measured intelligence	Standard IQ scale	REC		107.4	106.5	12.5	13.9
GPA	Grade-point average	Usual grading scale ranging from 0 to 4	REC		2.42	2.10	.737	.762
AGEDATE	Age at first date	Years	PQ		15.4	15.6	1.64	1.90
FREQDATE1	Frequency of dating at the time of the adolescent survey	Dates per month	AQ		3.97	2.52	4.75	3.73
FREQDATE2	Frequency of dating during the last two years of high school	Dates per month	PQ		4.49	4.35	3.71	3.65
STEADY1	Going "steady" at the time of the adolescent survey	Dummy variable (1 = going steady; 0 = other)	AQ		.272	.195	.445	.396
STEADY2	Ever went "steady"	Dummy variable (1 = went steady; 0 = other)	PQ		.869	.875	.309	.304
EDEXP	Educational expectation	Dummy variable (1 = planned to go to college; 0 = other)	AQ	Measures whether respondent planned to go to go to college	.510	.551	.500	.497
OCCEXP	Occupational expectation	NORC occupational prestige scores	F	The NORC scores were reconciled to the 1970 Census occupation and industry codes for detailed titles (Temme, 1973). A comparable score derived by Bose (1973) was used to measure the prestige of housewife.	49.26	53.87	8.84	13.73
HWEXP	Housewife expectation	Dummy variable (1 = expected occupation to be housewife; 0 = expected other occupation)	F	Measures whether respondent expected her occupation to be "housewife" (women only)	.561	----	.496	----
EDHS	High school education	Dummy variable (1 = completed high school; 0 = other)	F	Measures whether high school was highest level of education completed	.383	.296	.486	.457
EDPOSTHS	Some post-high school education	Dummy variable (1 = completed some post-high school education; 0 = other)	F	Measures whether respondent completed one or more years of post-high school education but did not complete college	.252	.223	.434	.416
EDCOL	College education	Dummy variable (1 = completed college; 0 = other)	F	Measures whether college was highest level of education completed	.175	.171	.380	.376
EDPOSTCOL	Post-college education	Dummy variable (1 = completed some post-college education; 0 = other)	F	Measures whether respondent completed one or more years of education beyond college	.120	.249	.325	.433

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Table 3. (Continued)

Variable Label	Variable Name	Units of Measurement	Source[a]	Description	Mean[b] Females	Mean[b] Males	Standard Deviation[b] Females	Standard Deviation[b] Males
MIL	Military service	Dummy variable (1 = entered the military; 0 = other)	F		—	.368	—	.482
PREMPREG	Premarital pregnancy	Dummy variable (1 = premarital pregnancy; 0 = other)	F	Measures whether first birth occurred prior to first marriage or within seven months after first marriage	.143	.127	.350	.333

[a] AQ = Adolescent questionnaire.
F = Follow-up questionnaire and telephone interview.
PQ = Parent's questionnaire.
FQ = Follow-up questionnaire.
REC = School records.

[b] N for females = 3,433; N for males = 3,065.

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Table 4. Direct and Total Effects of Variables on the Probability of Entering the Civilian Labor Force Before Last Leaving Full-time Education, by Sex[a]

Independent Variable	Direct Effects		Total Effects	
	F[b]	M	F	M
FAED	-.004	.001	.002	.006
	(1.08)	(.35)	(.46)	(1.50)
MOED	.003	-.002	.008	.000
	(.78)	(.50)	(2.25)	(.09)
FAOCC	-.001	.000	.000	.001
	(1.38)	(.53)	(.33)	(1.22)
FAMINC	-.008	-.030	-.002	-.016
	(.95)	(3.27)	(.20)	(1.80)
SIBS	.002	.008	-.004	.000
	(.43)	(1.33)	(.85)	(.11)
IQ	.002	.002	.003	.003
	(1.29)	(2.00)	(3.82)	(3.97)
GPA	-.050	-.105	-.001	-.028
	(3.24)	(5.60)	(.08)	(1.71)
AGEDATE	.011	-.002	.007	-.001
	(1.94)	(.35)	(1.26)	(.15)
FREQDATE1	.000	-.001	-.003	-.002
	(.13)	(.44)	(1.31)	(.67)
FREQDATE2	.009	-.002	.006	-.001
	(2.82)	(.43)	(1.95)	(.41)
STEADY1	.000	.011	-.005	.002
	(.03)	(.38)	(.22)	(.06)
STEADY2	-.022	.046	-.048	.035
	(.78)	(1.27)	(1.80)	(.97)
EDEXP	-.021	-.034	.064	.067
	(.96)	(1.30)	(3.27)	(2.82)
OCCEXP	-.001	-.001	.001	.003
	(1.06)	(.56)	(.67)	(2.95)
HWEXP	-.023	——	-.064	——
	(1.05)		(3.04)	
EDHS	-.005	.056	-.005	.056
	(.13)	1.13)	(.13)	(1.13)
EDPOSTHS	.256	.361	.256	.361
	(5.93)	(7.21)	(5.93)	(7.21)
EDCOL	.233	.391	.233	.391
	(4.68)	(7.00)	(4.68)	(7.00)
EDPOSTCOL	.496	.521	.496	.521
	(9.43)	(8.89)	(9.43)	(8.89)
MIL	——	-.042	——	-.042
		(2.12)		(2.12)
PREMPREG	-.021	-.026	-.021	-.026
	(.76)	(.83)	(.76)	(.83)
Constant	-.424	-.292		
$\bar{F}$	.222	.306		
Likelihood Ratio Test (χ^2)	344.65	265.93		
N	3,160	3,011		

[a] The logistic function $P_j = 1/(1 + e^{-\Sigma X_i \beta_{ij} - u_j})$ was estimated by maximum likelihood. The coefficients reported are $\beta_{ij}(\bar{P}_j)(1-\bar{P}_j)$, where $\bar{P}_j$ is as indicated for each sex. Asymptotic t-values for each β are shown in parenthesis.

[b] F = females; M = males.

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Table 5. Direct and Total Effects of Variables on the Probability of Marrying Before Experiencing a Nonfamilial Role Change, by Sex[a]

Independent Variable	Probability of Marrying Before Last Leaving Full-time Education				Probability of Marrying Before Last Leaving Full-time Education and Entering the Civilian Labor Force			
	Direct Effects		Total Effects		Direct Effects		Total Effects	
	F[b]	M	F	M	F	M	F	M
FAED	-.003 (.78)	-.006 (1.38)	.003 (.99)	.002 (.61)	.001 (.46)	-.002 (.62)	.003 (1.31)	.001 (.50)
MOED	.006 (1.78)	.005 (1.15)	.011 (3.38)	.007 (1.76)	.001 (.48)	.000 (.19)	.004 (1.74)	.001 (.48)
FAOCC	.000 (.23)	.001 (1.04)	.001 (1.12)	.002 (2.55)	.000 (.73)	.000 (.59)	.000 (.11)	.001 (2.08)
FAMINC	.009 (1.30)	-.020 (2.24)	.017 (2.48)	.006 (.73)	.010 (2.19)	.003 (.62)	.012 (2.92)	.013 (2.65)
SIBS	.001 (.15)	.010 (1.37)	-.011 (2.18)	-.009 (1.59)	-.001 (.34)	-.003 (.67)	-.007 (2.11)	-.013 (3.21)
IQ	.000 (.62)	.000 (.44)	.003 (4.83)	.005 (7.49)	.000 (.02)	-.001 (1.68)	.001 (3.02)	.002 (5.65)
GPA	.000 (.22)	-.026 (1.48)	.037 (2.91)	.076 (4.89)	.006 (.67)	.027 (2.55)	.018 (2.31)	.063 (6.46)
ACEDATE	-.018 (3.37)	-.026 (3.87)	-.022 (4.02)	-.024 (3.74)	-.013 (3.94)	-.014 (3.48)	-.015 (4.52)	-.015 (3.76)
FREQDATE1	.006 (2.69)	-.001 (.21)	.003 (1.44)	-.002 (.62)	.002 (1.95)	.000 (.10)	.002 (1.26)	.000 (.09)
FREQDATE2	.011 (4.68)	.013 (3.89)	.009 (3.83)	.011 (3.53)	.005 (3.39)	.008 (4.17)	.004 (3.02)	.007 (3.92)
STEADY1	.008 (.39)	.092 (3.33)	.005 (.23)	.064 (2.51)	.000 (.03)	.031 (1.88)	-.003 (.27)	.022 (1.39)
STEADY2	.103 (3.44)	.101 (2.82)	.080 (2.72)	.098 (2.74)	.070 (3.40)	.074 (3.18)	.067 (3.19)	.076 (1.09)
EDEXP	.001 (.06)	-.095 (3.56)	.075 (3.95)	.056 (2.40)	-.005 (.35)	-.047 (2.73)	.027 (2.23)	.013 (.83)
OCCEXP	.000 (.33)	.002 (2.36)	.002 (1.60)	.006 (7.36)	.001 (1.11)	.002 (4.25)	.001 (1.64)	.004 (7.39)
HWEXP	-.053 (2.49)	——	-.080 (3.88)	——	-.018 (1.37)	——	-.030 (2.29)	——
EDHS	.010 (.24)	.138 (1.43)	.010 (.24)	.138 (1.43)	-.023 (.91)	.049 (.74)	-.023 (.91)	.049 (.74)
EDPOSTHS	.205 (4.66)	.491 (5.24)	.205 (4.66)	.491 (5.24)	.059 (2.29)	.157 (2.42)	.059 (2.29)	.157 (2.42)
EDCOL	.237 (4.86)	.656 (6.83)	.237 (4.86)	.656 (6.83)	.086 (3.02)	.242 (3.69)	.086 (3.02)	.242 (3.69)
EDPOSTCOL	.381 (7.45)	.842 (8.62)	.381 (7.45)	.842 (8.62)	.111 (3.71)	.308 (4.65)	.111 (3.71)	.308 (4.65)
MIL	——	-.044 (2.18)	——	-.044 (2.18)	——	-.042 (3.22)	——	-.042 (3.22)
PREMPREC	.006 (.25)	.038 (1.18)	.006 (.25)	.038 (1.18)	.014 (.96)	.032 (1.63)	.014 (.96)	.032 (1.63)
Constant	-.416	-.342			-.199	-.337		
$\bar{P}$	.185	.231			.077	.097		
Likelihood Ratio Test (χ^2)	494.21	770.91			291.08	536.04		
N	3,429	3,050			3,409	3,005		

[a]The logistic function $P_j = 1/(1 + e^{-\sum X_i \beta_{ij} - u_j})$ was estimated by maximum likelihood. The coefficients reported are $\beta_{ij}(\bar{P}_j)(1-\bar{P}_j)$, where $\bar{P}_j$ is as indicated for each sex. Asymptotic t-values for each β are shown in parentheses.

[b]F = females; M = males.

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Table 6. Direct and Total Effects of Variables on the Probability of Marrying and Having a Child Before Experiencing a Nonfamilial Role Change, by Sex[a]

Independent Variable	Probability of Marrying and Having a Child Before Last Leaving Full-time Education				Probability of Marrying and Having a Child Before Last Leaving Full-time Education and Entering the Civilian Labor Force			
	Direct Effects		Total Effects		Direct Effects		Total Effects	
	F[b]	M	F	M	F	M	F	M
FAED	-.002 (.58)	-.004 (1.23)	.001 (.19)	.001 (.25)	.000 (.11)	-.001 (.50)	.000 (.15)	.000 (.23)
MOED	.004 (1.37)	.003 (.88)	.007 (2.30)	.003 (1.01)	.002 (1.54)	-.001 (.47)	.003 (1.91)	.000 (.33)
FAOCC	.000 (.54)	.000 (.63)	.000 (.00)	.000 (.36)	.000 (.33)	.000 (.83)	.000 (.41)	.000 (.00)
FAMINC	-.004 (.62)	-.022 (2.93)	-.004 (.61)	-.007 (.96)	.000 (.16)	-.001 (.30)	-.003 (.95)	.003 (.74)
SIBS	.004 (.81)	.007 (1.41)	-.002 (.48)	.000 (.12)	-.003 (.95)	-.002 (.56)	-.003 (1.29)	-.004 (1.46)
IQ	.001 (2.08)	.000 (.36)	.002 (3.38)	.003 (4.58)	.000 (1.15)	-.001 (1.32)	.000 (2.06)	.001 (3.06)
GPA	-.008 (.63)	-.028 (1.81)	.003 (.29)	.031 (2.26)	.005 (.87)	.013 (1.70)	.004 (.69)	.026 (3.65)
AGEDATE	-.005 (.95)	-.026 (4.52)	-.006 (1.33)	-.025 (4.45)	-.003 (1.16)	-.008 (2.98)	-.003 (1.41)	-.009 (3.14)
FREQDATE1	.000 (.40)	.003 (1.41)	-.001 (.54)	.003 (1.21)	.000 (.08)	.002 (1.92)	.000 (.43)	.002 (1.95)
FREQDATE2	.008 (4.28)	.007 (2.48)	.008 (4.04)	.006 (2.44)	.003 (3.89)	.003 (2.47)	.003 (3.87)	.003 (2.55)
STEADY1	.017 (.95)	.014 (.62)	.018 (1.00)	.115 (.21)	.009 (1.15)	.002 (.19)	.009 (1.18)	-.001 (.12)
STEADY2	.113 (3.29)	.035 (1.10)	.110 (3.18)	.039 (1.21)	.016 (1.06)	.021 (1.20)	.019 (1.21)	.023 (1.31)
EDEXP	-.009 (.30)	-.062 (2.77)	.033 (1.99)	.022 (1.08)	-.023 (2.88)	-.022 (1.82)	-.013 (1.64)	.002 (.15)
OCCEXP	-.001 (.90)	.001 (1.36)	.000 (.06)	.004 (5.02)	.000 (.06)	.001 (2.73)	.000 (.33)	.002 (4.88)
HWEXP	-.043 (2.42)	——	-.039 (3.48)	——	-.015 (1.82)	——	-.020 (2.53)	——
EDHS	.033 (.86)	.190 (1.59)	.033 (.86)	.190 (1.59)	.008 (.50)	.006 (.14)	.008 (.50)	.006 (.14)
EDPOSTHS	.178 (4.51)	.407 (3.47)	.178 (4.51)	.407 (3.47)	.047 (2.75)	.062 (1.56)	.047 (2.75)	.062 (1.56)
EDCOL	.156 (3.55)	.499 (4.20)	.156 (3.55)	.499 (4.20)	.045 (2.35)	.091 (2.25)	.045 (2.35)	.091 (2.25)
EDPOSTCOL	.203 (4.43)	.615 (5.15)	.203 (4.43)	.615 (5.15)	.049 (2.37)	.127 (3.09)	.049 (2.37)	.127 (3.09)
MIL	——	-.018 (1.04)	——	-.018 (1.04)	——	-.003 (.36)	——	-.003 (.36)
PREMPREG	.072 (4.07)	.126 (5.43)	.072 (4.07)	.126 (5.43)	.050 (6.98)	.059 (5.58)	.050 (6.98)	.059 (5.58)
Constant	-.532	-.287			-.192	-.114		
$\bar{Y}$	.107	.132			.026	.039		
Likelihood Ratio Test (χ^2)	177.17	344.28			123.73	192.06		
N	3,153	2,996			3,127	2,948		

[a] The logistic function $P_i = 1/(1 + e^{-\Sigma X_{1ij}\beta_{1ij} - u_j})$ was estimated by maximum likelihood. The coefficients reported are $\beta_{1j}(\bar{P}_j)(1-\bar{P}_j)$, where $\bar{P}_j$ is as indicated for each sex. Asymptotic t-values for each β are shown in parenthesis.

[b] F = females; M = males.